Amendment to the Claims

In the Claims:

Please amend Claims 1, 12, 19, and 29 as follows:

1. (Currently Amended) A method for enabling a user to create or modify a design for an aircraft and evaluate flight characteristics of the design, comprising the steps of:

(a)   enabling the user to input a plurality of parameters that define the design of the aircraft;

(b)   processing the plurality of parameters to generate a plurality of aerodynamic coefficients that define a flight model for the design of the aircraft;

(c)   producing a plurality of flight model data files that ~~include~~ are compatible with a flight simulation program, the plurality of flight model data files including:

(i)   the aerodynamic coefficients generated; and

(ii)   selected parameters input by the user; and

(d)   subsequently, enabling the user to evaluate the flight characteristics results of the design in real-time by interactive, simulated flying of the aircraft as represented in graphic images on a display, within a flight simulation program, using the plurality of flight model data files, wherein said interactive, simulated flying of the aircraft enables the user's evaluation to be substantially based on a point of view of a pilot flying the aircraft.

2. (Original) The method of Claim 1, wherein the plurality of parameters include geometric properties of the aircraft, and wherein the step of processing comprises the step of using the geometric properties to determine a force developed by each of a plurality of component surfaces of the aircraft.

3. (Original) The method of Claim 1, wherein the step of enabling the user to input the plurality of parameters comprises the steps of:

(a)   associating allowed limits for at least some of the plurality of parameters; and

(b)   providing an indication if the user enters a parameter that is outside the allowed limits associated with said parameter.

4. (Previously Presented) The method of Claim 3, further comprising the step of excluding entry of any parameter that is outside the allowed limits associated with said parameter.

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5. (Original) The method of Claim 1, further comprising the steps of:

(a)   enabling the user to modify at least one of a plurality of parameters of an existing design for an aircraft; and

(b)   repeating steps (b) through (d) in Claim 1 in regard to the design of the existing aircraft as thus modified by the user, to enable the user to evaluate flight characteristics of the design of the existing aircraft as thus modified by the user.

6. (Original) The method of Claim 1, further comprising the step of modifying the flight model data files that were generated, based upon empirical data determined from use of the flight simulation program, to increase an accuracy of the flight characteristics experienced when simulating flying of the aircraft in the flight simulation program.

7. (Original) The method of Claim 1, wherein the step of producing the flight model data files includes the step of producing one flight model data file that includes binary data defining the aerodynamic coefficients for a plurality of component surfaces of the aircraft.

8. (Original) The method of Claim 1, wherein the step of producing the flight model data files includes the step of producing one flight model data file that includes at least some of the plurality of parameters input by the user that do not directly affect the flight characteristics of the aircraft.

9. (Original) The method of Claim 8, wherein said one flight model data file defines at least one of:

(a)   an instrument panel configuration for the aircraft; and

(b)   a plurality of sounds experienced when simulating flying of the aircraft.

10.   (Original) The method of Claim 1, wherein the step of processing the plurality of parameters comprises the steps of:

(a)   determining an order in which the aerodynamic coefficients for specific component surfaces of the aircraft are generated; and

(b)   generating the aerodynamic coefficients for the component surfaces in the order determined.

11. (Original) A memory medium on which are stored machine instructions for carrying out the steps of Claim 1.

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12. (Currently Amended) A method for enabling a user to create or modify a design for an aircraft and evaluate flight characteristics of the design as created or modified by the user, comprising the steps of:

(a)   enabling the user to input a plurality of parameters that define the design of the aircraft;

(b)   processing the plurality of parameters to generate a plurality of aerodynamic coefficients in a predefined sequence, said predefined sequence being selected to ensure that any aerodynamic coefficients required to generate other aerodynamic coefficients of component surfaces are generated first, said aerodynamic coefficients being generated to define a flight model for the design of the aircraft;

(c)   producing a plurality of flight model data files that include flight model data in a format that is compatible with a selected flight simulation program; and

(d)   subsequently, enabling the user to evaluate the flight characteristics results of the design in real-time by interactively simulating flying of the aircraft using the selected flight simulation program, as represented in graphic images on a display, said flight simulation program using the flight model data files, wherein said interactively, simulated flying of the aircraft enables the user's evaluation to be substantially based on a point of view of a pilot flying the aircraft.

13. (Original) The method of Claim 12, wherein the step of producing the flight model data comprises the step of producing a binary flight model data file that includes the aerodynamic coefficients for the aircraft and an environmental flight model data file that includes at least one of:

(a)   a control panel configuration; and

(b)   a set of sounds experienced by the user while simulating flying of the aircraft with the flight simulation program.

14. (Previously Presented) The method of Claim 12, further comprising the steps of:

(a)   enabling the user to modify a plurality of parameters for an existing aircraft design; and

(b)   carrying out steps (b) through (d) in Claim 12 for the existing aircraft design as thus modified.

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15. (Original) The method of Claim 12, further comprising the steps of:

        (a)   associating allowed limits for at least some of the plurality of parameters; and

        (b)   excluding entry of any parameter that is outside the allowed limits associated with said parameter.

16. (Original) The method of Claim 12, further comprising the step of modifying the flight model data that was generated, based upon empirical data determined from use of the flight simulation program, to increase an accuracy of the flight characteristics experienced when simulating flying of the aircraft in the flight simulation program.

17. (Original) The method of Claim 12, wherein an aerodynamic coefficient for aircraft lift curve slope is generated before an aerodynamic coefficient for static longitudinal stability.

18. (Original) A memory medium on which are stored machine instructions for carrying out the steps of Claim 12.

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19. (Currently Amended) A system for enabling a user to create or modify a design for an aircraft and evaluate flight characteristics of the design, comprising:

        (a)   a memory in which are stored machine instructions that define a plurality of functions;

        (b)   a display;

        (c)   a user input device for input of data, commands, and for controlling the aircraft; and

        (d)   a processor that is coupled to the memory, the display, and the user input device, said processor executing the machine instructions to carry out the plurality of functions, including:

        (i)   enabling the user to input a plurality of parameters that define the design of the aircraft through the input device;

        (ii)   processing the plurality of parameters to generate a plurality of aerodynamic coefficients that define a flight model for the design of the aircraft;

        (iii)   producing a plurality of flight model data files that <u>are compatible with a flight simulation program and that</u> include the aerodynamic coefficients generated and selected parameters input by the user; and

        (iv)   <u>subsequently,</u> enabling a user to evaluate the flight characteristics <u>results</u> of the design <u>in real-time</u> by simulating flying of the aircraft <u>in the flight simulation program</u> interactively ~~in response to~~ <u>as represented in</u> graphic images on the display, responsive to controls and commands provided by the user with the input device, wherein the flight characteristics of the design simulated during flying are based upon the plurality of flight model data files.

20. (Original) The system of Claim 19, wherein the plurality of parameters include geometric properties of the aircraft, and wherein the processor uses the geometric properties to determine a force developed by each of a plurality of component surfaces of the aircraft.

21. (Original) The system of Claim 19, wherein the machine instructions cause the processor to:

        (a)   associate allowed limits for at least some of the plurality of parameters; and

        (b)   provide an indication if a user enters a parameter that is outside the allowed limits associated with said parameter.

22. (Original) The system of Claim 21, wherein the machine instructions cause the processor to refuse entry of any parameter that is outside the allowed limits associated with said parameter.

23. (Previously Presented) The system of Claim 19, wherein the machine instructions further cause the processor to:

(a) enable a user to modify at least one of a plurality of parameters of an existing design for an aircraft; and

(b) repeat steps (b) through (d) in Claim 19 in regard to the design of the existing aircraft as thus modified by the user, to enable the user to evaluate flight characteristics of the design of the existing aircraft as thus modified by the user.

24. (Original) The system of Claim 19, wherein the machine instructions further cause the processor to modify the flight model data files that were generated, based upon empirical data determined for flight simulation, to increase an accuracy of the flight characteristics experienced when simulating flying of the aircraft.

25. (Original) The system of Claim 19, wherein the machine instructions cause the processor to produce one flight model data file that includes binary data defining the aerodynamic coefficients for a plurality of component surfaces of the aircraft.

26. (Original) The system of Claim 19, wherein the machine instructions cause the processor to produce one flight model data file that includes at least some of the plurality of parameters input by a user that do not directly affect the flight characteristics of the aircraft.

27. (Original) The system of Claim 26, wherein said one flight model data file defines at least one of:

(a) an instrument panel configuration for the aircraft; and

(b) a plurality of sounds experienced when simulating flying of the aircraft.

28. (Original) The system of Claim 19, wherein the machine instructions cause the processor to:

(a) determine an order in which the aerodynamic coefficients for specific component surfaces of the aircraft are generated; and

(b) generate the aerodynamic coefficients for the component surfaces in the order thus determined.

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29. (Currently Amended) A system for enabling a user to create or modify a design for an aircraft and evaluate flight characteristics of the design, comprising:

(a)   a memory in which are stored machine instructions that define a plurality of functions;

(b)   a display;

(c)   a user input device for input of data, commands, and for controlling the aircraft; and

(d)   a processor that is coupled to the memory, the display, and the user input device, said processor executing the machine instructions to carry out the plurality of functions, including:

(i)   enabling the user to input a plurality of parameters with the user input device, to define the design of the aircraft;

(ii)   processing the plurality of parameters to generate a plurality of aerodynamic coefficients in a predefined sequence, said predefined sequence being selected to ensure that any aerodynamic coefficients required to generate other aerodynamic coefficients of component surfaces are generated first, said aerodynamic coefficients being generated to define a flight model for the design of the aircraft;

(iii)   producing flight model data files of flight model data in a format compatible with a flight simulation program; and

(iv)   enabling the user to evaluate the flight characteristics results of the design in real-time by simulating flying of the aircraft interactively in response to as represented in graphic images on the display and controls and commands provided with the input device, using the flight model data in the flight simulator program.

30. (Original) The system of Claim 29, wherein the machine instructions cause the processor to produce a binary flight model data file that includes the aerodynamic coefficients for the aircraft and an environmental flight model data file that includes at least one of:

(a)   a control panel configuration; and

(b)   a set of sounds experienced by the user while simulating flying of the aircraft.

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31. (Previously Presented) The system of Claim 29, wherein the machine instructions further cause the processor to:

      (a)   enable a user to modify a plurality of parameters for an existing aircraft design; and

      (b)   carry out steps (b) through (d) in Claim 29 for the existing aircraft design as thus modified.

32. (Original) The system of Claim 29, wherein the machine instructions further cause the processor to:

      (a)   associate allowed limits with at least some of the plurality of parameters; and

      (b)   exclude entry of any parameter that is outside the allowed limits associated with said parameter.

33. (Original) The system of Claim 29, wherein the machine instructions further cause the processor to modify the flight model data that was generated, based upon empirical data determined from other simulated flying, to increase an accuracy of the flight characteristics experienced when simulating flying of the aircraft.

34. (Original) The system of Claim 29, wherein an aerodynamic coefficient for aircraft lift curve slope is generated before an aerodynamic coefficient for static longitudinal stability.

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